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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,992	07/07/2003	Joseph Yudovsky	AMAT/4191.C1/CPI/WCVD/PJS	8160
44257	7590	09/27/2005	EXAMINER	
PATTERSON & SHERIDAN, LLP 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER

1763

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/614,992

Applicant(s)

YUDOVSKY ET AL.

Examiner

Sylvia R. MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-6,8-14 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-6,8-14 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Terminal Disclaimer*

1. The terminal disclaimer filed on 7/25/2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US 6,521,292 and 6,589,352 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 3-6, 8-14 and 17-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-42 of U.S. Patent No. 6,544,340. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims held to the patent are narrower than the present invention. The claims were compared as follows:

The claims of the present invention are broader than those of the patent. Such that the limitations of the claims of the present invention encompass those of the patent. For

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example the present invention teaches a substrate support with a first and second edge ring wherein the first edge ring is a purge ring. Both rings mate each other by tapered recesses and respective tapered pins. Comparatively, the patent claims holes/recesses paired with lift pins.

4. Claims 3-6, 8-14 and 17-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,375,748. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims held to the patent are narrower than the present invention. The claims were compared as follows: The present invention teaches a substrate support with a first and second edge ring wherein the first edge ring is a purge ring. Both rings mate each other by tapered recesses and respective tapered pins. Comparatively, patent teaches an edge ring with hollow regions wherein a plurality of pins correspond to these regions.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 3-6, 8-14 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al (EP 0553691).

Regarding claim 3: Cheng teaches an apparatus comprising:

a) a substrate support 40

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- b) a first edge ring 50 disposed on the substrate support, the first edge ring having one or more tapered recesses 52 and
- c) a second edge ring 100 having one or more matching tapered pins 72 for mating engagement with the one or more tapered recesses of the first edge ring, wherein the first edge ring comprises a purge ring, see col. 10 lines 32-47.

Regarding claim 4: An apparatus comprising:

- a) a substrate support 40.
- b) a first edge ring disposed on the substrate support, the first edge ring having one or more tapered recesses 52, and
- c) a second edge ring having one or more matching tapered pins for mating engagement with the one or more tapered recesses of the first edge ring, wherein the second edge ring comprises a shadow ring (the shield acts as a shadow ring in that it masks a portion of the wafer as discussed in the specification page 3 of the present invention).

Regarding claim 5: An apparatus comprising:

- a) a substrate support;
- b) a first edge ring disposed on the substrate support, the first edge ring having one or more tapered recesses and
- c) a second edge ring having one or more matching tapered pins for mating engagement with the one or more tapered recesses of the first edge ring, wherein the first edge ring includes one tapered recess and one diametrically positioned tapered

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slot, see claim 11 of Cheng, and wherein the second edge ring includes two tapered pins diametrically

positioned for mating engagement with the recess and the slot.

Regarding claim 6: The apparatus of claim 3, wherein the substrate support comprises a purge gas channel, see col8 lines 25-58.

Regarding claim 8: An apparatus for processing substrates, comprising:

a) a chamber,

An apparatus for processing

b) a substrate support disposed in the chamber',

c) a first edge ring disposed on the substrate support, the first edge ring

having one or more tapered recesses and

d) a second edge ring having one or more matching tapered pins for mating engagement with the one or more tapered recesses of the first edge ring, further comprising:

e) a chamber body ring disposed on an interior surface of the chamber, the chamber body ring having one or more recesses for supporting engagement with the second edge ring, see Figs. 5-8 of Cheng et al.

Regarding claim 9: The apparatus of claim 8 wherein the first edge ring includes one or more slots disposed for mating engagement with the one or more tapered pins on the second edge ring, see Claim 11 of Cheng et al.

Regarding claim 10: The apparatus of claim 8 wherein the first edge ring comprises a purge ring see col. 10 lines 32-43.

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Regarding claim 11: The apparatus of claim 8 wherein the second edge ring comprises a shadow ring(the shield acts as a shadow ring in that it masks a portion of the wafer as discussed in the specification page 3 of the present invention).

Regarding claim 12: The apparatus of claim 8 wherein the first edge ring includes one tapered recess and one diametrically positioned tapered slot, and wherein the second edge ring includes two tapered with the recess and the slot, see Figs. 5-8 of Cheng et al. pins diametrically positioned for mating engagement

Regarding claim 13: The apparatus of claim 8 wherein the substrate support comprises a purge gas channel, and the first edge ring comprises a purge ring col. 10 lines 32-43.

Regarding claim 14: The apparatus of claim 8 wherein the one or more recesses on the chamber body ring include tapered side surfaces.

Regarding claim 17: A method for supporting a substrate in a chamber comprising:

- a) positioning the substrate on a substrate support having a first edge ring disposed around a substrate supporting surface, the first edge ring having one or more recesses, and
- b) positioning a second edge ring above the first edge ring, wherein the second edge ring has one or more pins for mating engagement with the one or more recesses on the first edge ring, and wherein the first edge ring comprises a purge ring see see Figs. 5-8 of Cheng et al and col. 10 lines 32-43.

Regarding claim 18: A method for supporting a substrate in a chamber comprising:

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- a) positioning the substrate on a substrate support having a first edge ring disposed around a substrate supporting surface, the first edge ring having one or more recesses, and
- b) positioning a second edge ring above the first edge ring, wherein the second edge ring has one or more pins for mating engagement with the one or more recesses on the first edge ring wherein the second edge ring comprises a shadow ring he shield acts as a shadow ring in that it masks a portion of the wafer as discussed in the specification page 3 of the present invention).

Regarding claim 19: A method for supporting a substrate in a chamber, comprising:

- a) positioning the substrate on a substrate support having a first edge ring disposed around a substrate supporting surface, the first edge ring having one or more recesses, and
- b) positioning a second edge ring above the first edge ring, wherein the second edge ring has one or more pins for mating engagement with the one o-r more recesses on the first edge ring wherein the first edge ring includes one tapered recess and one diametrically positioned tapered slot, and wherein the second edge ring includes two tapered pins diametrically positioned for mating engagement with the recess and the slot see claim 11 of Cheng et al.

Regarding claim 20: A method for supporting a substrate in a chamber, comprising:

- a) positioning the substrate on a substrate support having a first edge ring disposed around a substrate supporting surface the first edge ring having one or more



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recesses.

b) positioning a second edge ring above the first edge ring, wherein the second edge ring has one or more pins for mating engagement with the one or more recesses on the first edge ring and c) flowing a purge gas around the substrate during substrate processing see Fgs. 5-8 and col. 10 lines 32-43.

Claims 3-6, 8-14 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Koai et al (US 6,159,299).

Koai et al teaches an apparatus comprising:

- a) a substrate support pedestal 150
- b) a first edge ring 280 disposed on the substrate support, the first edge ring having one or more tapered recesses and
- c) a second edge ring 200 having one or more matching tapered pins 72 for mating engagement with the one or more tapered recesses of the first edge ring, wherein the first edge ring comprises a purge ring.

The edge ring assembly 200 is secured to the purge ring 280 by centering bolts (pins) 271. Slots 288 are engaged with the bolts.

Channels 156 are formed in the pedestal to provide gas flow.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438.

The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sylvia R MacArthur  
Patent Examiner  
Art Unit 1763

September 23, 2005